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Rail System Safety Report. 2013

Maine Department of Transportation

Rail System Safety Report

Prepared for Governor Paul R. LePage
as required by
Executive Order 2013-004

September 30, 2013

MaineDOT

1. Introduction

On July 6th 2013, a runaway and unattended freight train operated by Montreal, Maine and Atlantic (MMA) carrying 72 cars of crude oil derailed and exploded in Lac Megantic, Québec, taking 47 lives and destroying more than 30 buildings in the town. To assure Maine citizens that systems are in place to prevent such a tragedy in Maine, on July 9th Governor LePage issued Executive Order 2013-004, which required the Maine Department of Transportation (MaineDOT) to review the safety of the State's rail system and report back to the Governor.

The rail transportation system in the State of Maine consists of approximately 1,150 miles of rail track. All railroads in Maine are operated by private sector companies. In fact, Maine state law prohibits the State from operating a railroad. 23 MRSA 7155. Rail transportation is crucial to the well-being of Maine's economy, and is an integral part of interstate and international commerce. Accordingly, the field of railroad safety is generally pre-empted by federal law and regulations promulgated and enforced by the Federal Rail Administration (FRA).

In acknowledgement of the primary federal role, the Executive Order 2013-004, copy attached as Appendix A, required MaineDOT to review available FRA rail safety reports, request FRA reports on MMA inspections, use any available information on the cause of the Lac Megantic tragedy to mitigate any safety concerns, and continue to cooperate with the FRA. The Order also required a report back to the Governor, including any findings and recommendations, within 90 days of the Order.

This report is the result. It summarizes inspections that occurred before and after the Lac Megantic tragedy, the results of a request by MaineDOT Commissioner Bernhardt to Maine's five freight rail companies regarding best practices for securing freight trains, emergency orders that have been issued by federal rail safety regulators in Canada and the United States in response to the events in Lac Megantic, and findings and recommendations.

As set forth below, although no form of transport is free from all risk, it appears that existing rail safety practices are adequate, and that a tragedy like Lac Megantic will not occur in Maine if the private railroad operators follow their own safety practices and those of the FRA, the agency responsible for rail safety in the United States.

2. Safety Inspections Occurring Before the Lac Megantic Tragedy

a. The General Regulatory Framework

As noted above, federal law governs rail activity and the FRA provides oversight and enforcement of railroad safety. FRA rules govern all aspects of rail safety including the following five disciplines: (1) track, (2) grade crossings, (3) mechanical / rail equipment, (4) operating practices and procedures, and (5) movement of hazardous materials. Under FRA regulations, each railroad operator has primary responsibility to ensure its infrastructure and

operations meet or exceed applicable federal safety standards. The FRA conducts periodic, random inspections of the railroads to ensure regulations are being followed and infrastructure properly maintained.

The 1970 Railroad Safety Act authorizes states to work in partnership with the FRA to enforce federal rail road safety regulations. The Act allows state inspectors to be trained and certified by the FRA. The state inspectors are then able to conduct investigative and surveillance activities to ensure the application and interpretation of federal rail safety rules, regulations, orders and standards reflect national uniformity. These state inspectors work in concert with regional FRA inspectors who perform inspections in several states within a designated region.

Pursuant to 23 MRSA § 7312, MaineDOT has participated in the FRA track and equipment safety inspection program since the early 1980s. MaineDOT currently employs a full time track inspector and our rail maintenance manager also acts as a part-time inspector, working closely with the FRA to perform safety inspections on rail track and equipment. The MaineDOT inspectors are delegated certain authority by the FRA as set forth in 49 Code of Federal Regulations, part 212. These certified inspectors file inspection reports with the FRA for necessary enforcement of observed deficiencies or rule violations. Through MaineDOT participation in this program, our inspectors have access to private rail track throughout the state as well as the FRA database containing inspection reports and results of Maine inspections.

Working in cooperation with the FRA, inspection reports were thoroughly reviewed after the Governor's Executive Order to ensure that the ongoing FRA inspection program in Maine is consistent and concentrated in areas of highest rail traffic and/or concern. This type of data review is also done internally at FRA on an ongoing basis to improve its inspection program. In addition, if concerns are raised by the public or if significant data or events show areas of concern, an increased number of inspections and FRA scrutiny comes into play.

b. Focused Inspections Due to Increased Volume of Crude Oil Shipments

In addition to routine random inspections, there have been recent focused inspections on routes that carry bulk crude oil and other hazardous material in Maine.

In July of 2012, the FRA conducted a focused inspection on Pan Am Railways reviewing track conditions within Maine, with particular focus on the Pan Am mainline track.

During the week of May 6, 2013, the FRA conducted another focused inspection on 200 miles of Pan Am track between Portland and Mattawamkeag, and the FRA reviewed over 600 of Pan Am's internal track inspection records.

In June of 2013, FRA inspectors completed additional concentrated inspections and completed a planned FRA Automated Track Inspection (ATIP) of the Pan Am Freight mainline between the New Hampshire border and Mattawamkeag, Maine. Their focused inspection continued onto the Eastern Maine Railway from Mattawamkeag to Brownville, followed onto the Maine Montreal Atlantic track, from Brownville to Hermon. The ATIP car rides over rails

testing for a variety of track conditions simultaneously; highlighting areas of defects or locations where additional on the ground inspection might be needed.

In sum, prior to the Lac Megantic tragedy, there were 1,201 FRA observations performed in 2013 on railroads in Maine across the five (5) disciplines from January through June. Many were focused specifically on the risk posed by increased transport of crude oil. During this process, defects were identified, requiring attention by the railroad operators, however, no defects were found that warranted the shutdown of any rail lines in Maine. Assuming the railroad companies follow established safety procedures, there was no indication from these inspections that a disaster like Lac Megantic could occur.

3. Safety Inspections Occurring After the Lac Megantic Tragedy

The July 6th Lac Megantic tragedy obviously required that FRA inspections be expedited and focused on the MMA.

Accordingly, during the second and third weeks of July, 2013, the FRA conducted focused inspections on the Montreal, Maine and Atlantic Railway, across all five (5) FRA disciplines. The FRA expanded the ATIP inspection program to include additional portions of the MMA lines, Eastern Maine Railway (EMR) lines, and Pan Am Rail lines. Specifically, the inspection program targeted the crude oil and high volume rail routes. Specifically, the ATIP returned to Maine and inspected from Vanceboro on the EMR, to Brownville and then from Brownville on the MMA line to the Canadian border in Jackman. They tested from Brownville to Searsport on the MMA line, and also tested the Bucksport Branch on the Pan Am line. The ATIP car also tested from Maine into Lac Megantic, Québec per a Transport Canada request. The ATIP also tested track as it departed the state back to the Maine/New Hampshire border.

Since July, there have been an additional 581 observations conducted by FRA and state inspectors across the five (5) disciplines. All concerns and defects observed in inspections are documented and forwarded to the railroad being inspected and FRA staff for correction and follow up. During this process, defects were identified, requiring attention by the railroad operators. Again, however, no defects were found that warranted the shutdown of any rail lines in Maine.

4. Industry Best Practices Regarding Securing Parked Freight Trains

The cause of the Lac Megantic disaster is still under investigation by Transport Canada, the federal agency with oversight of rail safety within Canada. A final report may not come for many months. However, the very existence of a high-speed, unattended, runaway freight train carrying hazardous material indicated that certain railway safety practices were either not being followed or could be improved. Statements from MMA officials themselves indicated that the train may not have been properly secured.

To move this discussion forward, on July 17th MaineDOT Commissioner Bernhardt requested each of the Presidents/General Managers of the five freight railroads operating in Maine to voluntarily share their best practices on securing parked freight trains. See copy attached as Appendix B. Asking for voluntary best practices, recognizing that the FRA is the pre-emptive regulator for rail safety in the United States, gave MaineDOT and the rail operators in Maine an inventory of practices in use by the freight railroads with overall rail safety in mind.

As requested, by July 31st MaineDOT received responses from all five of the freight carriers within the State. Most have recently updated or added additional requirements around parked trains due to the Lac Megantic derailment. Early reviews by MaineDOT demonstrated that the following commonalities among most of the railroads.

- Additional and updated training for all engineers and conductors around securing trains, including operational rules as well as TSA training.
- Crew staffing, including two person crews in most cases.
- Train crews are to notify dispatchers whenever a freight train is parked and left, with notification to include that the train is locked, the number of handbrakes that have been set, that the handbrakes have been tested, and if any wheel chocks or derails have been applied.
- Parked trains will be left on mainlines only when no other option is available to the crew, again crew will notify the dispatcher the train is on the mainline and how it is secured.
- All parked trains will have locomotive cabs locked to prevent any unauthorized entry and reverser controls removed. (the reverser is what the engineers use to control the movement of the train)
- Any cars left in a siding without a locomotive attached will have handbrakes set and derails at both ends of the cars or that switches are set so the cars cannot leave the siding.

5. Emergency Orders Issued By Canadian and U.S. Rail Safety Officials

Further review of these practices by MaineDOT were not required, as the federal agencies responsible for railroad safety each issued emergency orders that pre-empted the issue.

On July 23rd, Transport Canada issued a one-page Emergency Directive pursuant to Section 33 of the Canadian Railway Safety Act. This Directive, attached as Appendix C, applies only to railway operations in Canada, but it is indicative of best practices. The Directive requires that railway companies ensure that:

- unattended locomotives be protected from unauthorized entry;
- hand brakes be applied according to Canadian rail operating rules if a train is unattended for more than one hour;
- unattended trains also have the automatic brakes set and the independent brake fully applied;

- all trains carrying "dangerous goods" be left unattended on main track;
- two person crews on trains carrying "dangerous goods".

On August 2nd, the FRA issued Emergency Order 28. A two page News Release summarizing the Order is attached as Appendix D, and the full text of the 23-page Order can be found www.fra.dot.gov/eLib/details/L04719. This Order, which was effective September 1, 2013, required that all railroads undertake the following measures.

- Trains carrying specified hazardous materials on mainline or side track outside the yard must not be unattended.
- Procedures to secure unattended trains carrying specified hazardous materials including locking the locomotive and reporting of the setting of the correct number of hand brakes.
- Communication to dispatchers and recordation of number of hand brakes applied, tonnage and length of train, grade and terrain of track, relevant weather conditions, and type of equipment.
- Training and notification requirements.

MaineDOT was encouraged, as both of these emergency directives were in line with the best practices the state's rail operators reported using or had implemented post-Lac Megantic. MaineDOT believes these new directives will help clarify rules regarding securing freight trains and improve rail safety on both sides of the border.

6. Finding and Conclusions

Based upon the foregoing, and after review of available FRA rail safety reports including MMA inspections and available information on the cause of the Lac Megantic tragedy, MaineDOT makes the following findings and draws the following conclusions.

1) Prior to the Lac Megantic tragedy, there were 1,201 FRA observations performed in 2013 on railroads in Maine across the five (5) disciplines from January through June. Many were focused specifically on the risk posed by increased transport of crude oil. During this process, defects were identified, requiring attention by the railroad operators, however, no defects were found that warranted the shutdown of any rail lines in Maine. Assuming the railroad companies follow safety procedures, there was no indication from these inspections that a disaster like Lac Megantic could occur.

2) Since Lac Megantic tragedy, there have been an additional 581 observations conducted by FRA and state inspectors across the five (5) disciplines. All concerns and defects observed in inspections are documented and forwarded to the railroad being inspected and FRA staff for correction and follow up. Again, during this process, defects were identified, requiring attention by the railroad operators. Again, however, no defects were found that warranted the shutdown of any rail lines in Maine.

3) Although no form of transport is free from all risk, existing rail safety practices appear adequate. A tragedy like Lac Megantic will not occur in Maine if the private railroad operators follow their own safety practices and those required by the Federal Railroad Administration (FRA).

4) MaineDOT should continue to closely monitor the investigation into the cause of the Lac Megantic being conducted by Transport Canada, and should continue to work closely with the FRA to ensure that there are timely safety inspections of our rail infrastructure throughout the state. MaineDOT should follow the implementation of FRA Emergency Order 28 and weigh-in on other proposed rulemaking for improving railroad safety nationally.

List of Appendices

Appendix A – Executive Order 2013-004 – July 9, 2013

Appendix B – Letter Commissioner Bernhardt Letter Requesting Best Practices to Secure Freight Trains – July 17, 2013

Appendix C - Transport Canada Emergency Directive – July 23, 2013

Appendix D – News Release Regarding FRA Emergency Order 28 – August 2, 2013

OFFICE OF
THE GOVERNOR

NO. 2013-004
DATE July 9, 2013

AN ORDER DIRECTING MAINEDOT TO REVIEW THE SAFETY OF FREIGHT RAIL TRANSPORTATION IN MAINE

WHEREAS, Maine has significant rail systems moving freight throughout and across our State;

WHEREAS, this system is crucial to the well-being of Maine's economy, consisting of over 1,100 miles of trackage;

WHEREAS, this rail system is regulated by the federal government and the tracks are owned both by governmental entities and private businesses; and

WHEREAS, a review by the Maine Department of Transportation of our rail system is in order to ensure our system is safe;

NOW, THEREFORE, I, Paul R. LePage, Governor of the State of Maine, hereby order as follows:

1. The Maine Department of Transportation (MDOT) shall:

    a. Review all available safety reports related to railroads in Maine compiled by the Federal Rail Administration, and request additional inspections if warranted;
    b. Request from the Federal Rail Administration a report on the results of inspections of the track, equipment and operations of the Montreal, Maine, and Atlantic Railway;
    c. Utilize information as it becomes available on the cause of the Quebec train derailment to reassess the safety of Maine's rail infrastructure and take appropriate action to mitigate any safety concerns; and
    d. Continue to coordinate cooperation between MaineDOT track inspectors and the Federal Rail Administration.

Appendix A

2. MDOT shall report back to the Governor on any significant findings as they become available, and within 90 days provide the Governor with a progress report on the review and analysis conducted pursuant to this Order, including any findings and recommendations.

The effective date of this Executive Order is July 9, 2013.

Paul R. LePage, Governor

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Paul R. LePage
GOVERNOR

David Bernhardt
COMMISSIONER

July 17, 2013

Dear

RE: Request for Voluntary Best Practices Regarding Securing of Parked Freight Trains

The tragedy in Lac-Megantic, Quebec has caused everyone to reflect on how our transportation industry can provide the level of railroad safety that the public deserves and expects, while at the same time allowing the efficient movement of goods needed to support our economy here in Maine and across North America.

As Canadian officials continue to investigate, no one should jump to conclusions regarding exact causes of the derailment on July 6th. However, the very existence of a high-speed, runaway freight train carrying volatile materials indicates that certain railroad safety practices can be established, improved, or communicated. Of course, we at the Maine Department of Transportation (MaineDOT) understand that the Federal Railroad Administration (FRA) is the pre-emptive regulator of rail safety in the United States. However, pursuant to the Executive Order of Governor Paul R. LePage dated July 9, 2013, MaineDOT wants to facilitate a voluntary, proactive effort to establish reasonable and common sense practices that address the risk of runaway freight trains.

Toward that end, I have directed my staff to work with rail operators in Maine to gather and review best practices regarding the securing of parked freight trains. Specifically, we ask that you submit existing or proposed policies or practices that relate to securing parked trains including parking locations, grades, surrounding terrain, setting of hand brakes, monitoring of trains, timing of crew changes, security, derails, and related training. Obviously, it would be most helpful if the railroads carrying freight in Maine could communicate with each other and agree upon such best practices. Alternatively, your company can separately submit to us suggested practices and related communications by letter or email.

Given the importance of the issue, I request that you submit the requested information to Nate Moulton, MaineDOT's Director of Rail Transportation, by July 31, 2013. After we have heard from you, we hope to document these best practices and that rail operators in Maine will voluntarily agree to follow them until federal rules or guidelines on these topics are issued.

We at MaineDOT hope that you will see this as an opportunity to work together to improve rail safety in Maine, which at the end of the day is the responsibility of all of us, whether we work in public service or private industry.

If you have any questions do not hesitate to contact Nate Moulton or myself.

Sincerely,

David Bernhardt
Commissioner

Emergency Directive Pursuant to Section 33 of the *Railway Safety Act*

Safety and Security of Locomotives in Canada

To: All Railway Companies and Local Railway Companies

Section 33 of the *Railway Safety Act* (RSA) gives the Minister of Transport the authority to issue an emergency directive to any company when the Minister is of the opinion that there is an immediate threat to safe railway operations or the security of railway transportation.

Although the cause of the tragic accident in Lac-Mégantic remains unknown at this time, and although I remain confident in the strength of the regulatory regime applicable to railway transportation in Canada, I am of the opinion that, in light of the catastrophic results of the Lac-Mégantic accident and in the interest of ensuring the continued safety and security of railway transportation, there is an immediate need to clarify the regime respecting unattended locomotives on main track and sidings and the transportation of dangerous goods in tank cars using a one person crew to address any threat to the safety and security of railway operations.

Pursuant to section 33 of the RSA, all railway companies and local railway companies are hereby ordered to:

1. Ensure, within 5 days of the issuance of the emergency directive, that all unattended controlling locomotives on main track and sidings are protected from unauthorized entry into the cab of the locomotives;
2. Ensure that reversers are removed from any unattended locomotive on main track and sidings;
3. Ensure that their company's special instructions on hand brakes referred to in Rule 112 of the *Canadian Rail Operating Rules* are applied when any locomotive coupled with one or more cars is left unattended for more than one hour on main track or sidings;
4. Ensure, when any locomotive coupled with one or more cars is left unattended for one hour or less on main track or sidings, that in addition to complying with their company's special instructions on hand brakes referred to in item 3 above, the locomotives have the automatic brake set in full service position and have the independent brake fully applied;
5. Ensure that no locomotive coupled with one or more loaded tank cars transporting "dangerous goods" as this expression is defined in section 2 of the *Transportation of Dangerous Goods Act* (TDGA) is left unattended on main track; and
6. Ensure that no locomotive coupled with one or more loaded tank cars transporting "dangerous goods" as this expression is defined in section 2 of the TDGA is operated on main track or sidings with fewer than two persons qualified under their company's requirements for operating employees.

For the purpose of this emergency directive an "unattended locomotive" or a "locomotive coupled with one or more cars that is left unattended" means that it is not in the immediate physical control or supervision of a qualified person acting for the company operating the locomotive or car(s) in the case of items 3 and 4 above or a person acting for the company operating the locomotive or car(s) in the case of items 1, 2 and 5 above.

For the purpose of this emergency directive, "main track" and "sidings" do not include main track or sidings in yards and terminals.

For greater certainty, nothing in this emergency directive relieves a company of the obligation to

comply with Rule 112 of the *Canadian Rail Operating Rules.*

Pursuant to section 33 of the RSA, this emergency directive takes effect immediately and is to remain in effect until 23:59 EST on December 31, 2013.

_____
Assistant Deputy Minister
Safety and Security

Date:_____

Related Items

July 23, 2013
News Release - **Transport Canada announces emergency directive to increase rail safety**

Date modified: 2013-07-24

U.S. Department of Transportation
Office of Public Affairs
1200 New Jersey Avenue, SE
Washington, DC 20590
www.dot.gov/briefingroom

News

FRA 22-13
Friday, August 2, 2013
Contact: Kevin F. Thompson
Tel.: 202-493-6024

Federal Railroad Administration Issues Emergency Order to Prevent Unintended Hazardous Materials Train Movement

WASHINGTON – The U.S. Department of Transportation's Federal Railroad Administration (FRA) today issued an Emergency Order and Safety Advisory to help prevent trains operating on mainline tracks or sidings from moving unintentionally. The FRA's announcement was made in response to the July 6, 2013 derailment in Lac-Mégantic, Quebec, Canada, as it awaits additional data once the investigation into the crash is complete. The actions announced today build on the success of FRA's rigorous safety program, which has helped reduce train accidents by 43 percent over the last decade, and made 2012 the safest year in American rail history.

The Emergency Order is a mandatory directive to the rail industry, and failure to comply will result in enforcement actions against violating railroads.

"Safety is our top priority," said U.S. Transportation Secretary Anthony Foxx. "While we wait for the full investigation to conclude, the Department is taking steps today to help prevent a similar incident from occurring in the United States."

Today's Emergency Order outlines measures that all railroads must undertake within the next 30 days:

- No train or vehicles transporting specified hazardous materials can be left unattended on a mainline track or side track outside a yard or terminal, unless specifically authorized.
- In order to receive authorization to leave a train unattended, railroads must develop and submit to FRA a process for securing unattended trains transporting hazardous materials, including locking the locomotive or otherwise disabling it, and reporting among employees to ensure the correct number of hand brakes are applied.
- Employees who are responsible for securing trains and vehicles transporting such specified hazardous material must communicate with the train dispatchers the number of hand brakes applied, the tonnage and length of the train or vehicle, the grade and terrain features of the track, any relevant weather conditions, and the type of equipment being secured.

- Train dispatchers must record the information provided. The dispatcher or other qualified railroad employee must verify that the securement meets the railroad's requirements, and they must verify that the securement meets the railroad's requirements.
- Railroads must implement rules ensuring that any employee involved in securing a train participate in daily job briefings prior to the work being performed.
- Railroads must develop procedures to ensure a qualified railroad employee inspects all equipment that an emergency responder has been on, under or between before the train can be left unattended.
- Railroads must provide this EO to all affected employees.

"Today's action builds upon a comprehensive regulatory framework we have had in place for some time," said FRA Administrator Joseph C. Szabo. "The safe shipment of all cargo is paramount and protecting the safety of the American public is fundamental to our enforcement strategy and we are encouraged by the industry's willingness to cooperate with this approach going forward."

In addition to the Emergency Order, the FRA, together with the Pipelines and Hazardous Materials Safety Administration (PHMSA), issued a Safety Advisory detailing a list of recommendations railroads are expected to follow. U. S. DOT believes that railroad safety is enhanced through the use of multiple crew members, and the Safety Advisory recommends railroads review their crew staffing requirements for transporting hazardous material and ensure that they are adequate. Other recommendations in the Safety Advisory include: conducting system-wide evaluations to identify particular hazards that may make it more difficult to secure a train or pose other safety risks and to develop procedures to mitigate those risks. A copy of the Safety Advisory can be viewed HERE.

"When PHMSA talks about the transportation of hazardous materials, safety is a prerequisite to movement," said PHMSA Administrator Cynthia Quarterman. "We are taking this action today and we will be looking hard at the current rail operating practices for hazardous materials to ensure the public's safety."

As FRA continues to evaluate safety procedures following the recent crash, it will convene an emergency meeting of its Railroad Safety Advisory Committee to consider what additional safety measures may be required. FRA plans to develop a website that will allow the public to track industry compliance with the Emergency Order and Safety Advisory issued today. FRA has developed a plan that outlines six major actions that have occurred or will occur to further ensure that our regulatory response to the Canadian rail accident remains transparent.

Under current DOT regulations, all freight railroads are required to develop and implement risk assessments and security plans in order to transport any hazardous material, including a plan to prevent unauthorized access in rail yards, facilities and trains carrying hazardous materials. Railroads that carry hazardous materials are required to develop and follow a security protocol while en route; railroad employees are subject to background checks and must complete training. Training programs and protocols are reviewed and audited by the FRA routinely and generally designed to be progressive so as the level of risk increases so does the level of security required. A description of past, present, and proposed FRA actions on this issue can be found here.

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